OIPE IAP100
JUL 12 2006
PATENT & TRADEMARK OFFICE

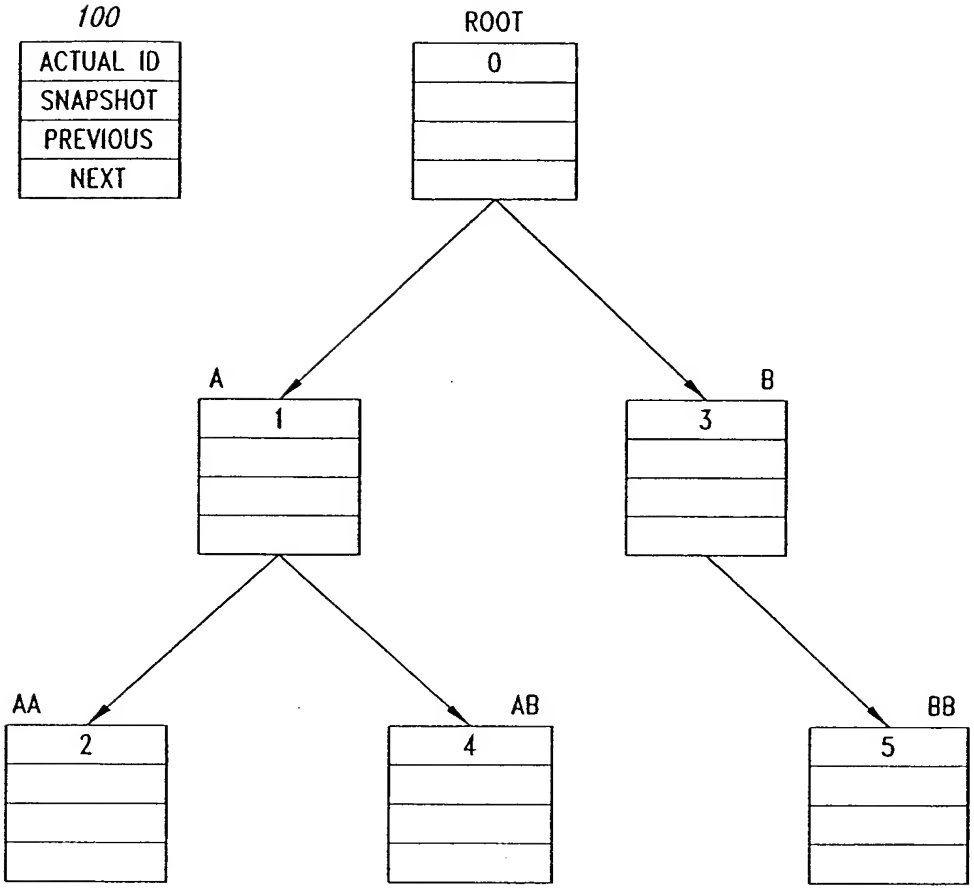

FIG. 1

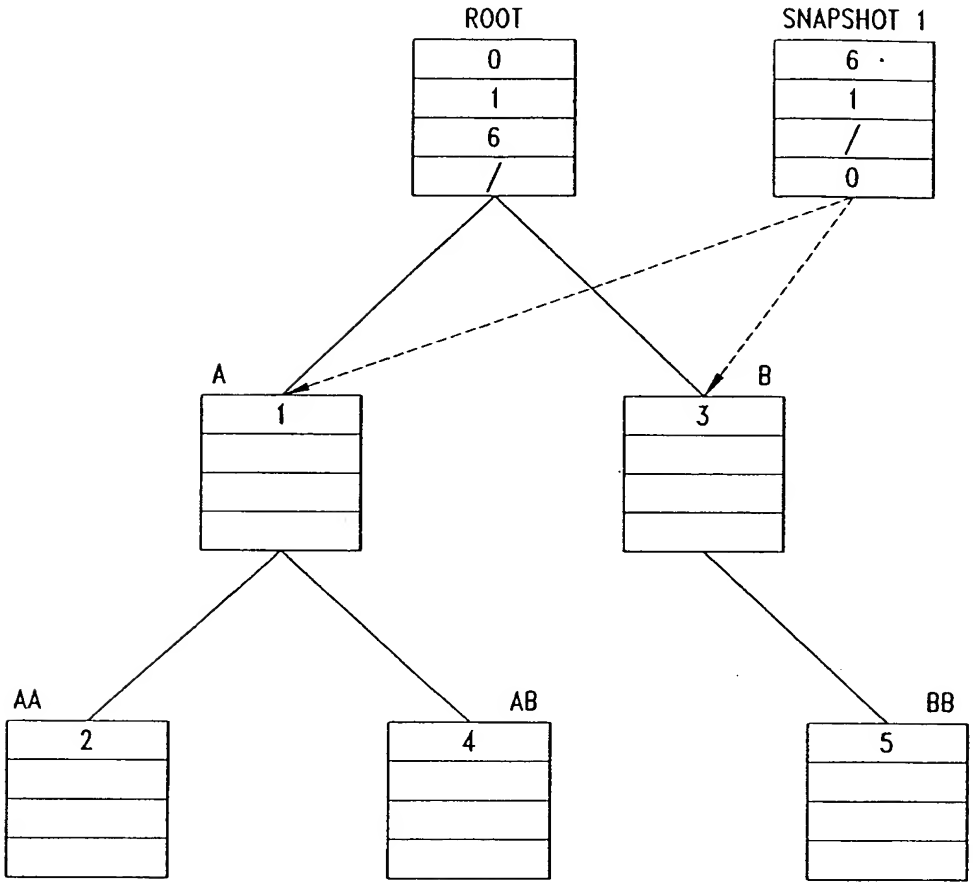

FIG. 2

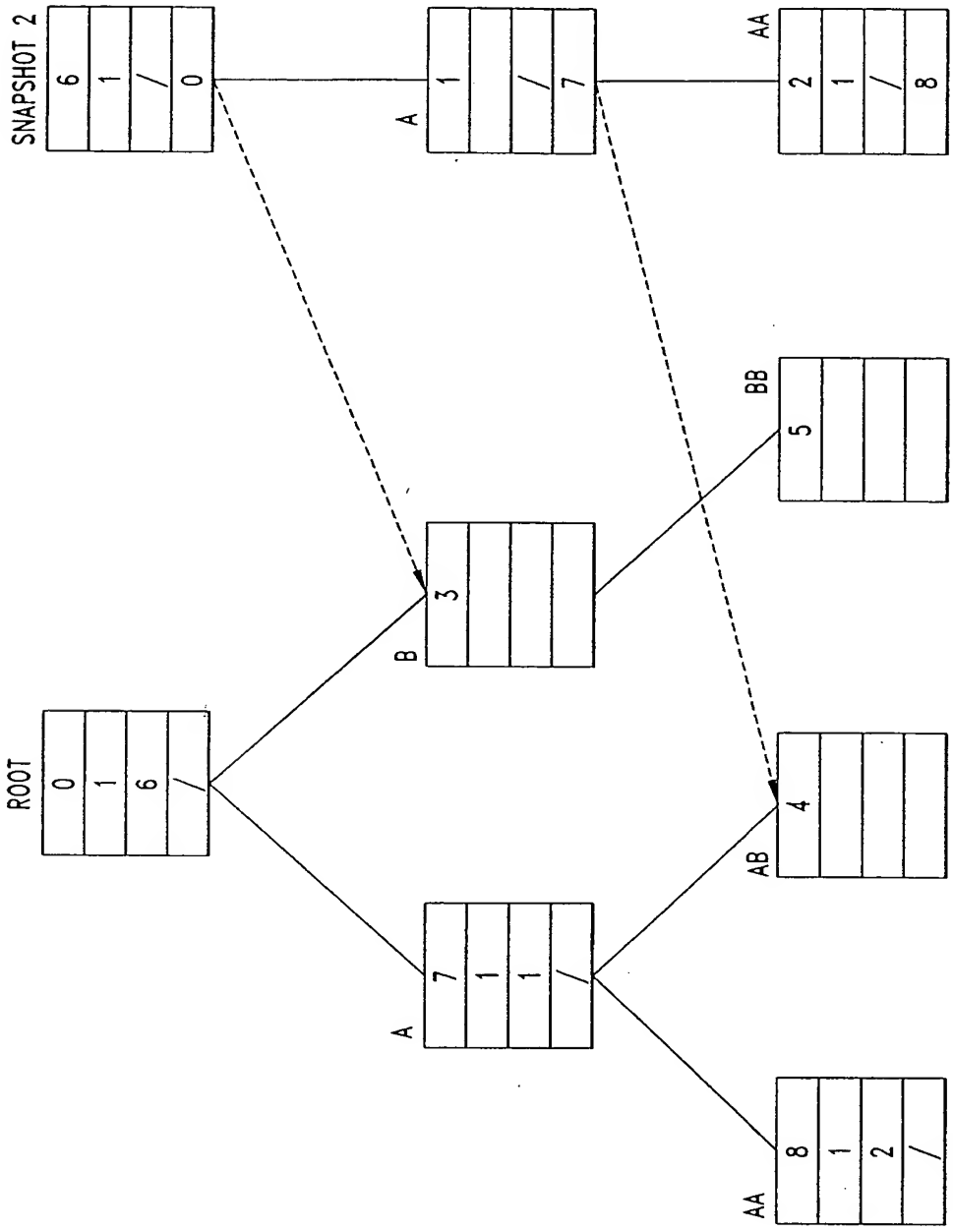

FIG. 3

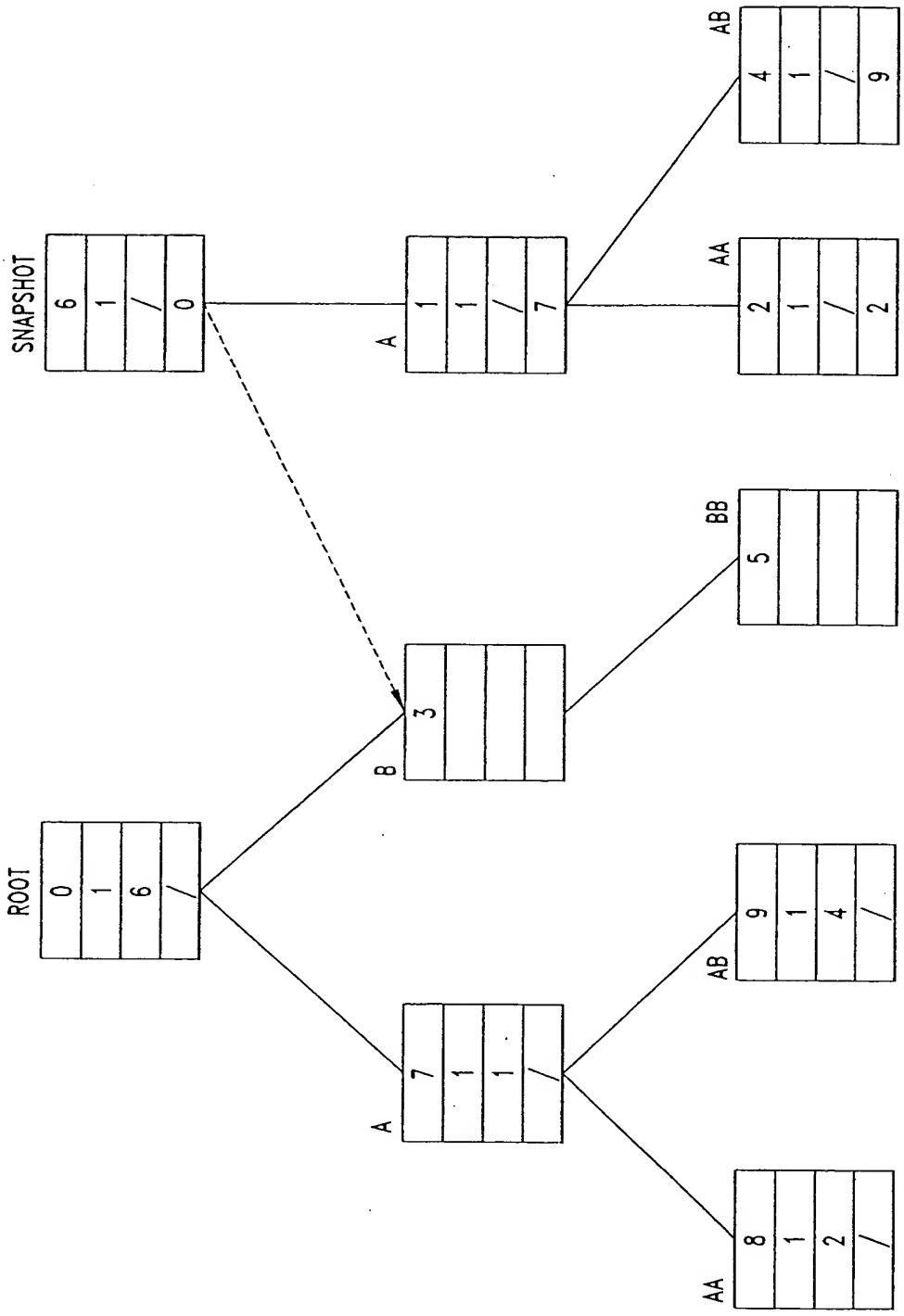
SNAPSHOT
6
1
/
0
A
1
1
/
7
AB
4
1
/
9
AA
2
1
/
2
BB
5
B
3
ROOT
0
1
6
/
A
7
1
1
/
AB
9
1
4
/
AA
8
1
2
/

FIG. 4

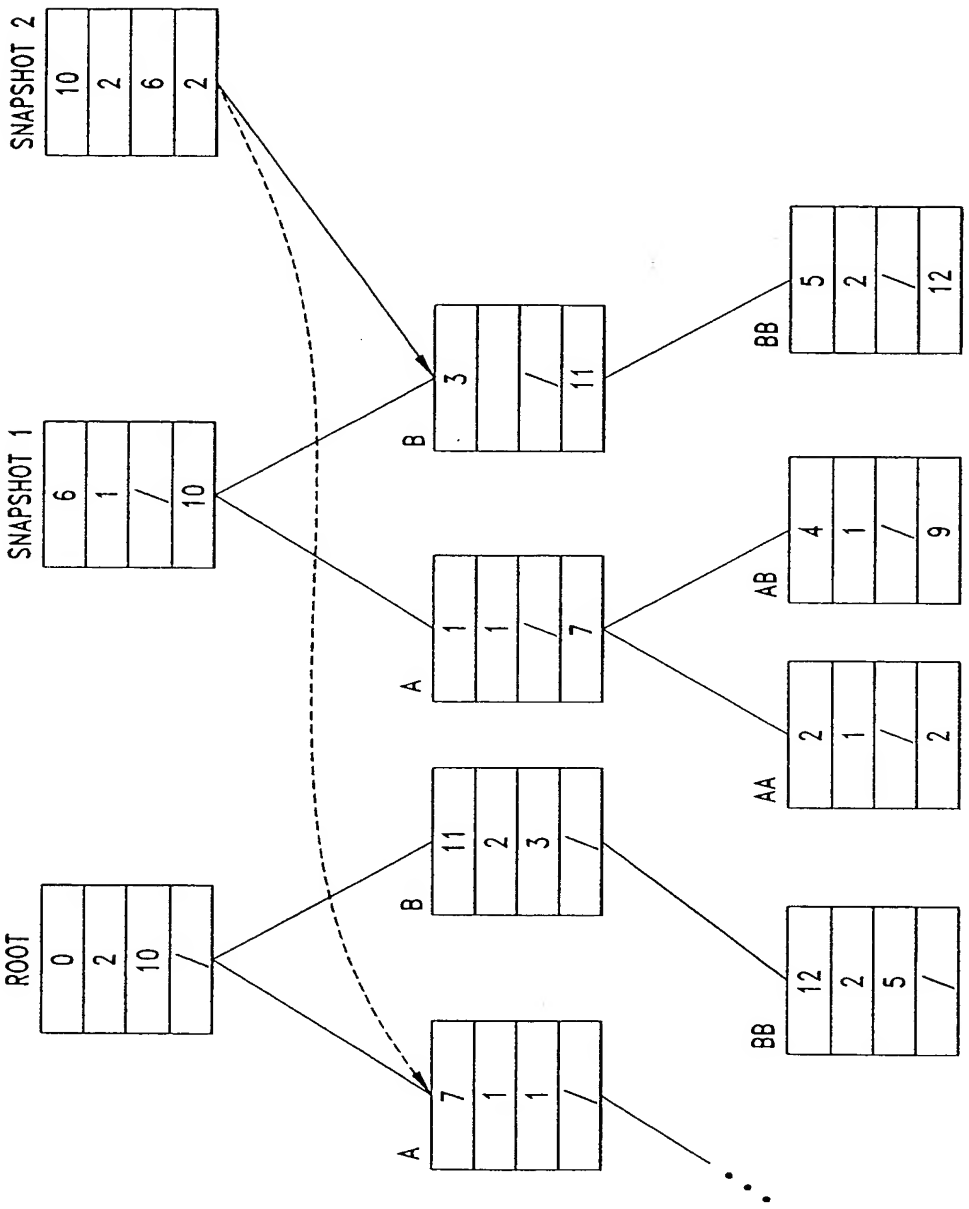
SNAPSHOT 2
10
2
6
2
SNAPSHOT 1
6
1
/
10
ROOT
0
2
10
/
B
3
/
11
A
1
1
/
7
B
11
2
3
/
A
7
1
1
/
BB
5
2
/
12
AB
4
1
/
9
AA
2
1
/
2
BB
12
2
5
/

FIG. 5

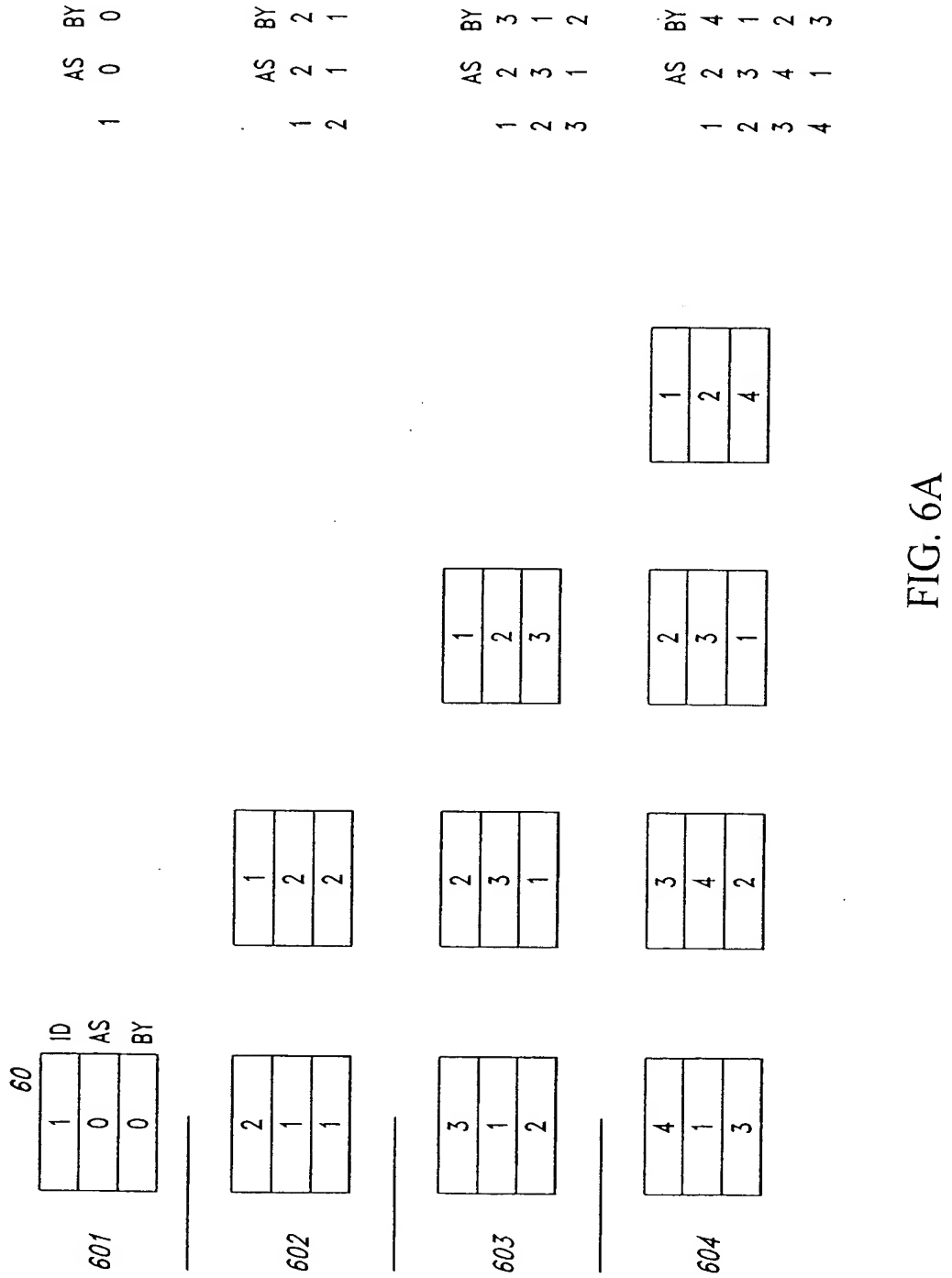
60
ID
AS
BY
1
0
0
601
2
1
1
602
3
1
2
603
4
1
3
604
AS BY
1 0
AS BY
1 2
2 1
AS BY
1 3
2 1
3 2
AS BY
1 4
2 1
3 2
4 3
1
2
3
2
3
1
3
4
2
1
2
2
1
2
3
1
2
4
1

FIG. 6A

AS	BY
1	4
2	3
3	4
4	1

AS	BY
1	4
3	0
0	1
4	3
1	

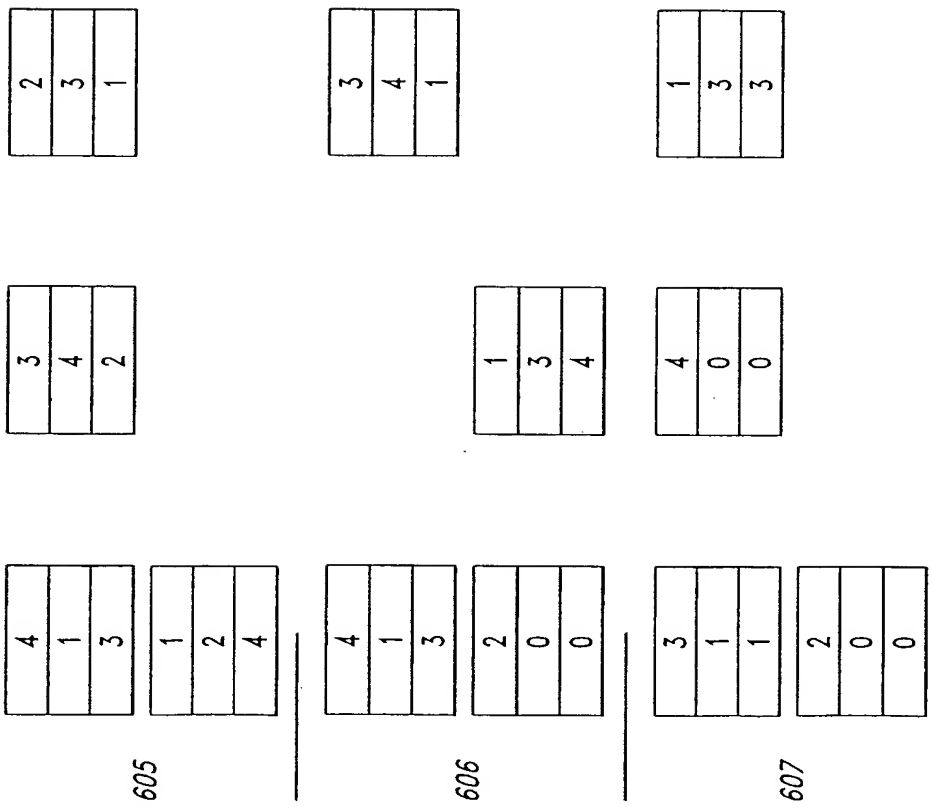

FIG. 6B

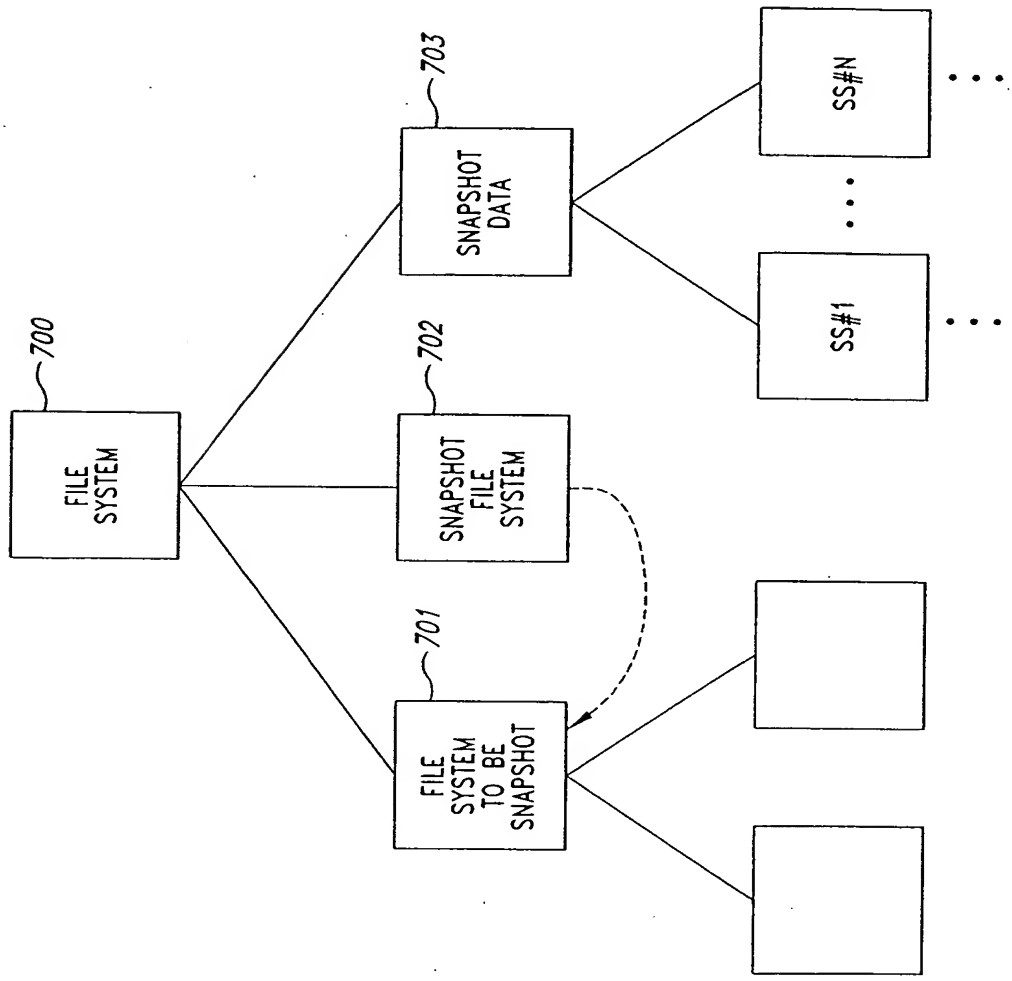
700
FILE SYSTEM
703
SNAPSHOT DATA
702
SNAPSHOT FILE SYSTEM
701
FILE SYSTEM TO BE SNAPSHOT
SS#N
SS#1

FIG. 7

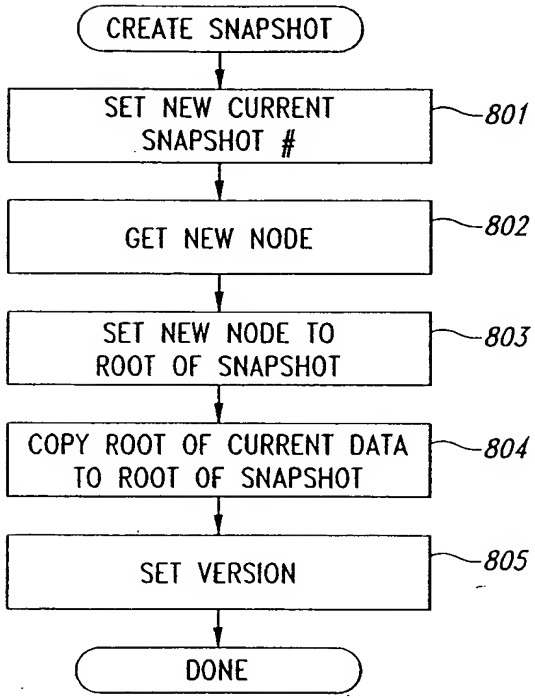
CREATE SNAPSHOT
SET NEW CURRENT SNAPSHOT #
801
GET NEW NODE
802
SET NEW NODE TO ROOT OF SNAPSHOT
803
COPY ROOT OF CURRENT DATA TO ROOT OF SNAPSHOT
804
SET VERSION
805
DONE

FIG. 8

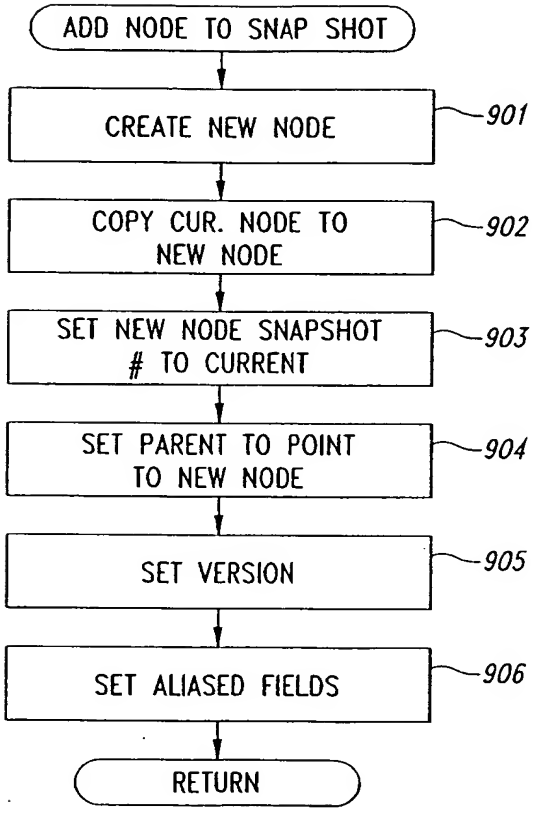
ADD NODE TO SNAP SHOT
CREATE NEW NODE
901
COPY CUR. NODE TO NEW NODE
902
SET NEW NODE SNAPSHOT # TO CURRENT
903
SET PARENT TO POINT TO NEW NODE
904
SET VERSION
905
SET ALIASED FIELDS
906
RETURN

FIG. 9

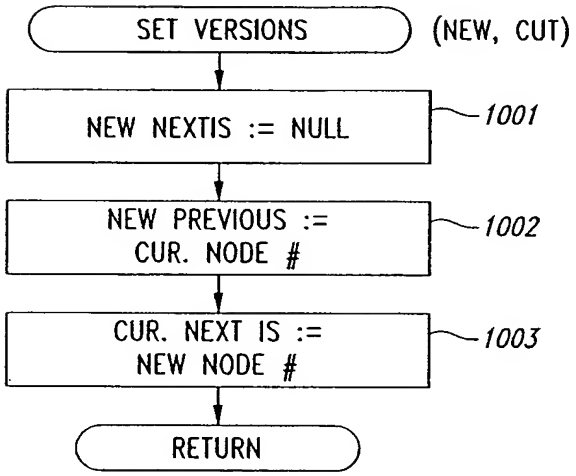
SET VERSIONS
(NEW, CUT)
NEW NEXTIS := NULL
1001
NEW PREVIOUS := CUR. NODE #
1002
CUR. NEXT IS := NEW NODE #
1003
RETURN

FIG. 10

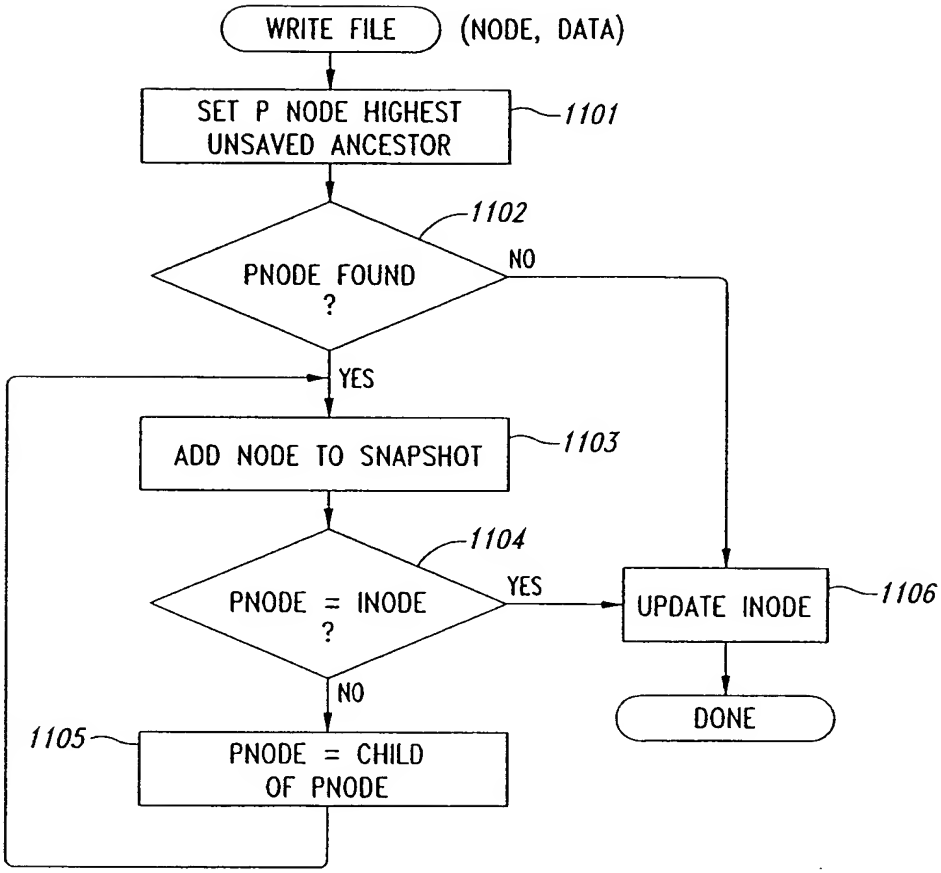
WRITE FILE
(NODE, DATA)
SET P NODE HIGHEST UNSAVED ANCESTOR
1101
1102
PNODE FOUND ?
NO
YES
ADD NODE TO SNAPSHOT
1103
1104
PNODE = INODE ?
YES
UPDATE INODE
1106
NO
DONE
1105
PNODE = CHILD OF PNODE

FIG. 11